

CLAIMS

1. Thin layer of hafnium oxide, characterised in that the hafnium oxide is under amorphous form with a density less than  $8 \text{ gm/cm}^3$ .

5        2. Stack of thin layers, characterised in that it comprises at least one layer of amorphous hafnium oxide with a density less than  $8 \text{ gm/cm}^3$ .

3. Stack of thin layers according to Claim 2,  
10 characterised in that the stack comprises at least one layer of another material deposited above or below the amorphous hafnium oxide layer with a density less than  $8 \text{ gm/cm}^3$ .

15        4. Stack of thin layers according to Claim 3, characterised in that the other material is silicon oxide.

5. Stack of thin layers according to Claim 2,  
20 characterised in that the stack comprises alternate layers of amorphous hafnium oxide with a density less than  $8 \text{ gm/cm}^3$  and another material.

6. Stack of thin layers according to Claim 5,  
25 characterised in that the other material is silicon oxide.

7. Optical component with a surface treatment, characterised in that said surface treatment comprises

at least one layer of amorphous hafnium oxide with a density less than  $8 \text{ gm/cm}^3$ .

8. Optical component according to Claim 7,  
5 characterised in that said treatment comprises a stack of thin layers.

9. Optical component according to Claim 8,  
characterised in that the stack comprises alternate  
10 layers of amorphous hafnium oxide of density less than  $8 \text{ gm/cm}^3$  and another material.

10. Optical component according to Claim 9,  
characterised in that the other material is silicon  
15 oxide.

11. Process for vacuum deposit on a substrate of at least one layer of amorphous hafnium oxide by reactive evaporation under oxygen, of metallic hafnium,  
20 the process characterised in that the deposit is carried out without energy input to the substrate.

12. Process according to Claim 11, characterised in that the deposit is interrupted, and then restarted,  
25 to allow the substrate to cool.

13 Process according to Claim 11, characterised in that the substrate is cooled during deposit or during periods of interruption of deposit.